

## **MID OCTOBER 1998 HEAVY RAIN EVENT OVER CENTRAL AND SOUTH CENTRAL TEXAS**

### **Summary...**

A series of mid to high level tropospheric disturbances moving in from the west and southwest...plus an excellent moisture tap from the Pacific Ocean and Gulf of Mexico...helped to develop a very heavy rain event over South Central Texas and the Texas Hill Country...on Saturday October 17, 1998. As a cool front moved into the area late Saturday night and Sunday morning... October 18th...more rain developed ahead of and along the cool front.

On Sunday the 18th...the cool front drifted near the coast and stalled. In the wake of the front...on Sunday the 18th and also Monday the 19th...clouds...rain and showers lingered. Winds aloft continued out of the southwest... bringing a series of weak upper air disturbances...that helped trigger periods of occasional rain. Just above the shallow cool air at the surface...southerly winds pumped plenty of gulf moisture over the area...while at higher levels...southwest winds brought plenty of moisture from the Tropical Pacific. On the 20th and 21st of October...cloudy skies and occasional light to moderate rain was observed over the area.

The wettest month of climate record for San Antonio...since 1871... was October 1998. The heavy rains caused many rivers in the area to reach near or exceed record stage heights...causing widespread flooding in the flood plains of streams...creeks and rivers. According to the Texas Department of Public Safety, 31 people drowned during the floods, and the total property damage was estimated to be about 750 Million Dollars.

### **...History...**

This heavy rain event was similar not only to the October 1994 rain event that affected South and Southeast Texas...also other heavy rain events that have caused floods and flash floods over South Central Texas and the Texas Hill Country. The heavy rain events in October of 1994 over South and Southeast Texas was similar to the 1998 pattern for South Central Texas. During the October of 1994 rain events...winds aloft carried the rain making systems faster through South Central Texas on October 7th and 8th... producing 5 to 10 inches of rain. Later in October of 1994 over Southeast Texas, the rain making systems moved slower...producing a large flood event over Southeast Texas, with rain amounts between 10 and 30.50 inches

over parts of Southeast Texas. In the October 16 to 19, 1994 Southeast Texas rain event, the remnants of Eastern Pacific Hurricane Rosa came over Texas, with a plume of deep tropical moisture streaming northward in wake of Rosa. Over Southeast Texas most of the rain came Monday the 17th to Tuesday the 18th. General 10 to 20 inch rain amounts were observed. The maximum rain was 30.50 inches at Liberty.

Like the Southeast Texas heavy rain event in October 1994... winds aloft in the 1998 South Central Texas and parts of Central Texas heavy rain event did not carry the rain making system away...helping to bring the large rain amounts of near 10 to near 30 inches of rain. The largest documented rain was in southern Hays County just south of San Marcos, where near 30 inches of rain fell. According to the U.S. Geological Survey, about 2,300 square miles in 12 counties got at least 12 inches of rain and about 5,000 square miles in 19 counties got at least 8 inches of rain.

### **...For San Antonio...**

#### **Rainfall records established for San Antonio in October 1998 follow.**

The most rain recorded on any calendar day occurred Saturday, Oct. 17th, 1998...when 11.26 inches of rain fell at the San Antonio International Airport. The previous record was 6.83 inches on September 9...1921. The 11.26 inches of rain on October 17th...1998 even shattered the greatest 24 hour amount of 7.28 inches...recorded on September 26 to 27...1973. It also easily exceeded the record for October 17th...2.13 inches October 17...1948.

The most rainfall in a 24 hour period of 13.35 inches occurred from the 17th to the 18th. Previous record was 7.28 inches from Sep. 26th to 27th, 1973.

A new 30 day rainfall record for San Antonio of 19.09 inches from October 2...1998 to November 1...1998 has been established. The previous record was 18.45 inches...from May 13 to June 12...1987.

Wettest Month and October of record...with 18.07 inches of rain. Previous record wettest month 15.78 inches in Sep. 1946, and previous wettest October of 9.74 inches in 1994.

**For San Antonio - 5 wettest Octobers...**

- \*1. 1998 - 18.07 inches**
- 2. 2009 - 11.90 "**
- 3. 1994 - 9.74 "**
- 4. 1942 - 9.56 "**
- 5. 1913 - 8.86 "**

**For San Antonio - 5 wettest months...**

- \*1. 18.07 inches - October 1998**
- 2. 16.92 " - July 2002**
- 3. 15.78 " - September 1946**
- 4. 14.07 " - May 1935**
- 5. 13.96 " - December 1991**

**At San Antonio, the 5 greatest calendar day rainfall totals follow:**

- \*1. 11.26 inches - October 17 1998**
- 2. 9.52 " - July 1 2002**
- 3. 6.83 " - September 9 1921**
- 4. 6.82 " - May 31 1937**
- 5. 6.78 " - April 18 1915**

### **...For Austin...**

For October 1998 Austin received 12.39 inches of rain making October 1998 the 3rd wettest October and 16th wettest month for the Austin City climate location since the mid 19th century...when climate records began. On October 17...6.24 inches of rain fell at the Robert Mueller Airport in Austin. This is a new daily record for October 17. The old record for October 17th was 2.48 inches set back in 1937. Rainfall records for the Austin City location date back to 1856. Austin/Bergstrom Airport received 6.89 inches of rain on Saturday October 17 1998. For the Austin/Bergstrom location...the 12.73 inches in October 1998 was the 2nd wettest October and 6th wettest month since October 1942.

The 5 wettest Octobers for the Austin/City Location are...

1. 1925 - 12.63 inches
2. 1870 - 12.54 "
- \*3. 1998 - 12.39 "
4. 1960 - 12.30 "
5. 1973 - 11.11 "

The 5 wettest Octobers for Austin/Bergstrom are...

1. 1960 - 13.08 inches
- \*2. 1998 - 12.73 "
3. 1973 - 10.40 "
4. 1984 - 9.30 "
5. 1986 and 2002 - 9.11 "

The 5 wettest months for Austin/Bergstrom are...

1. June 1981 - 15.59 inches
2. June 2004 - 14.18 "
3. May 1965 - 13.69 "
4. October 1960 - 13.08 "
5. December 1991 - 12.88 "

The 5 wettest months for the Austin/City Location are...

1. September 1921 - 20.78 inches
2. April 1915 - 19.82 "
3. December 1913 - 16.14 "
4. June 1981 - 14.96 "
5. December 1991 - 14.16 "

The 6.24 inches of rain on October 17 1998 is the 10th Greatest calendar day precipitation total for the Austin City climate location at Austin Mabry. The 6.85 inches at Austin/Bergstrom was the 4th wettest day of record.

For Austin Mabry - the 10 greatest calendar day precipitation totals follow...

1. 15.00 inches - September 9 1921
2. 10.00 " - April 23 1915
3. 8.56 " - July 21 1919
4. 7.55 " - November 15, 2001
5. 7.39 " - October 14 1923
6. 7.04 " - September 7, 2010
7. 6.95 " - October 13 1925
8. 6.50 " - April 6 1900
- \*9. 6.34 " - December 3 1913
10. 6.24 " - October 17 1998

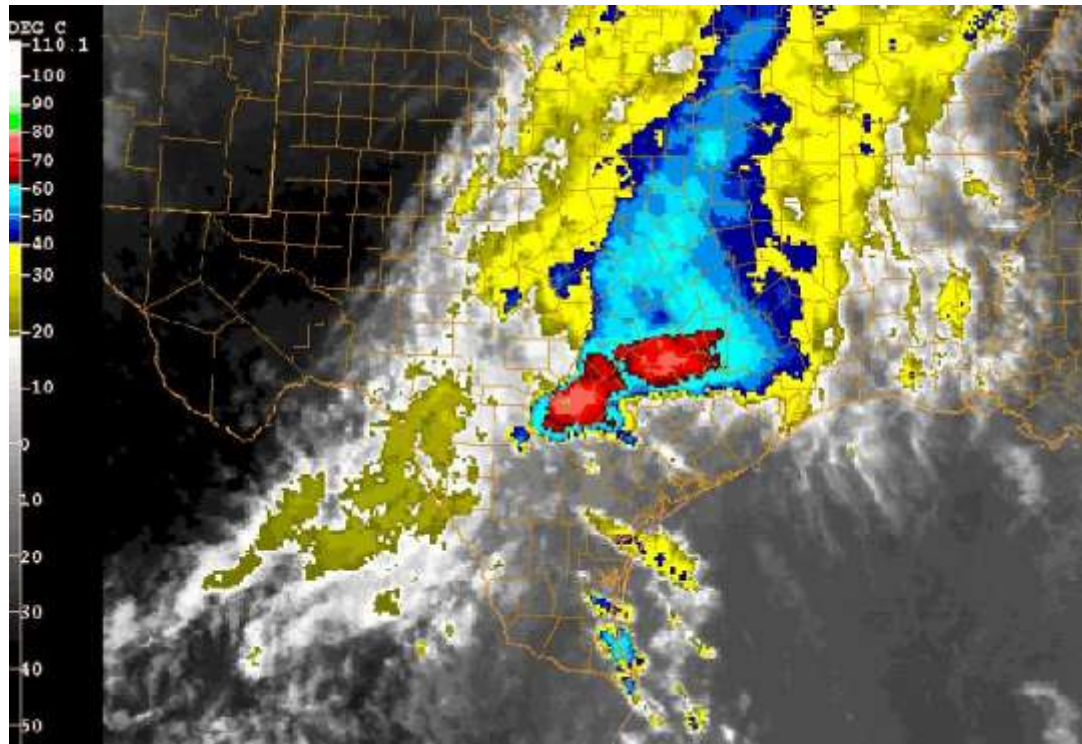
For Austin/Bergstrom - 10 greatest calendar day precipitation totals follow...

1. 8.70 inches - November 23, 1974
2. 8.68 " - November 15, 2001
3. 8.53 " - May 9, 1974
- \*4. 6.85 " - October 17, 1998
5. 5.97 " - September 6, 1986
6. 5.93 " - August 3, 1966
7. 5.73 " - June 11, 1981
8. 5.04 " - May 30, 1995
9. 5.01 " - January 9, 1991
10. 5.00 " - August 9, 1994

Rainfall amounts from northern Bexar County to southeast Kendall County...parts of Comal County...including the New Braunfels metro area...and parts of Hays County on October 17 and 18th...were near 15 to near 30 inches.

Del Rio was west of the heaviest rains. From October 16th to 1 pm October 21st Del Rio had 0.41 inches of rain. For October 1998 Del Rio had 1.46 inches of rain. The wettest October of record for Del Rio was 11.69 inches in October of 1930.

**146 PM CDT Satellite picture of the rain event on Saturday, October 17, 1998**



**245 PM CDT Satellite picture of the rain event on Saturday, October 17, 1998**

